



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/554,235

10/23/2006

Eiji Tani

64350(70904)

6558

21874

7590

07/08/2009

EDWARDS ANGELL PALMER & DODGE LLP

P.O. BOX 55874

BOSTON, MA 02205

EXAMINER

HAILEY, PATRICIA L

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

07/08/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/554,235	Applicant(s) TANI ET AL.	
	Examiner PATRICIA L. HAILEY	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) 1-7, 11, 14-18, 23-27 and 36-49 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8, 9, 12, 13, 19-22, 28-33 and 50 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 10, 34 and 35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/21/05, 10/23/06, 11/25/08</u> . | 6) <input type="checkbox"/> Other: _____ |

Election/Restrictions

1. Applicant's election with traverse of Group II, claims 8-10, 12, 13, 19-22, 28-35, and 50 in the reply filed on April 13, 2009, is acknowledged. The traversal is on the ground(s) that consideration and examination of the groups specified in the previous Office Action should not impose an undue burden. This is not found persuasive because, as set forth in the previous Office Action, Applicants' claims are directed to more than one invention. Although each invention is directed to a type of visible-light-responsive three-dimensional fine cell-structured photocatalytic filter, each invention requires a separate and detailed search, depending on what each filter comprises. Thus, there is an undue burden to search each invention.

The requirement is still deemed proper and is therefore made FINAL.

In response to Applicants' arguments regarding Japanese Publication No. 02-691751, the Examiner respectfully submits that Applicants' claims in their present form do not exclude the activated carbon coating disclosed in this reference. Applicants' claims do not recite that *only* a titanium oxide coating is provided on the sponge-like porous structure.

Claims 8-10, 12, 13, 19-22, 28-35, and 50 are under consideration by the Examiner.

2. Claims 1-7, 11, 14-18, 23-27, and 36-49 are hereby withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected visible-light-

Art Unit: 1793

responsive three-dimensional fine cell-structured photocatalytic filters, there being no allowable generic or linking claim.

Claim Objections

3. Claims 10, 34, and 35 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim must refer to other claims in the alternative. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

Claims 10, 34, and 35 do not refer to other claims in the alternative. For example, claim 10 recites the phrase "either one of claims 8 **and** 9" (emphasis added), which is not proper multiple dependent claim language.

Allowable Subject Matter

4. Claims 8, 9, 122, 13, 19-22, 28-33, and 50 are allowed.

5. The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not teach or suggest the claimed visible-light-responsive three-dimensional fine cell-structured photocatalytic filter, comprising a sponge-like porous structural body containing silicon carbide and at least one material selected from the group consisting of silicon, a silicon alloy, and carbon having a porosity of 85 vol.% or

Art Unit: 1793

more, and a titanium oxide coating provided on the surface thereof, wherein the porous structure is prepared by immersing said porous structural body in a solution containing or generating titanium oxide, drying said immersed structural body, and thereafter firing said dried structural body at 100°C to 800°C in an oxidizing atmosphere.

Priority

6. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Applicants' Priority Documents were filed on October 21, 2005.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PATRICIA L. HAILEY whose telephone number is (571)272-1369. The examiner can normally be reached on Mondays-Fridays, from 7:00 a.m. to 3:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1793

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 1700 Receptionist, whose telephone number is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/PATRICIA L. HAILEY/
Primary Examiner, Art Unit 1793
July 6, 2009